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ABSTRACT:

A collapsible liner e.g. for an estate car, comprises a base part (10), side parts (12) and an end part (14) hingedly connected together. The liner is collapsible to a substantially flat configuration and, when erected, forms an open-ended container. Over-centre latches (38) are provided to connect the side parts (12) and the end part (14) when erected. The body parts are ply-wood and the hinges are of a continuous flexible material such as rubber or plastics, preferably ribbed. The base and sides may be formed of more than one section, with the sections releasably connected together,

to extend the length
of the container (as shown) and a guard may be provided at
one or both ends.
<IMAGE>

⁽¹²⁾ UK Patent Application ⁽¹⁹⁾ GB ⁽¹¹⁾ 2 118 109 A

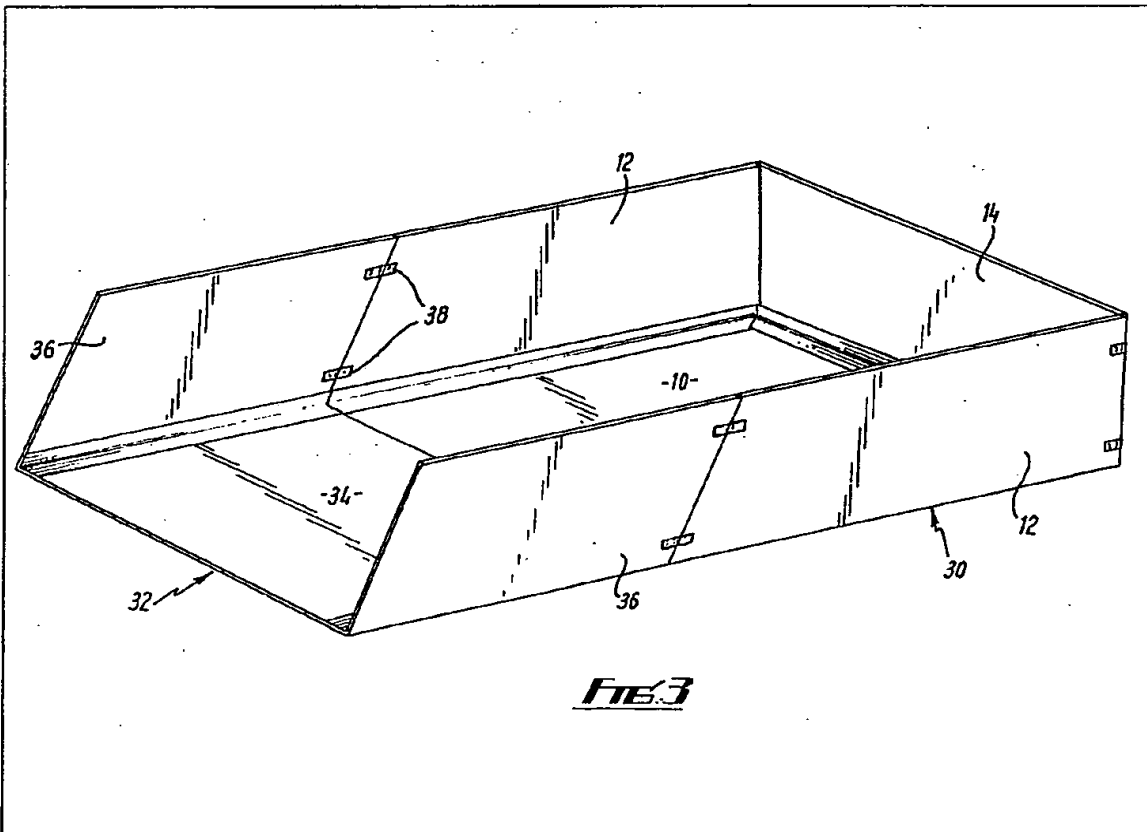
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- (54) Protective liners for vehicle load-spaces**

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configuration and, when erected, forms an open-ended container. Over-centre latches (38) are provided to connect the side parts (12) and the end part (14) when erected. The body parts are ply-wood and the hinges are of a continuous flexible material such as rubber or plastics, preferably ribbed. The base and sides may be formed of more than one section, with the sections releasably connected together, to extend the length of the container (as shown) and a guard may be provided at one or both ends.



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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

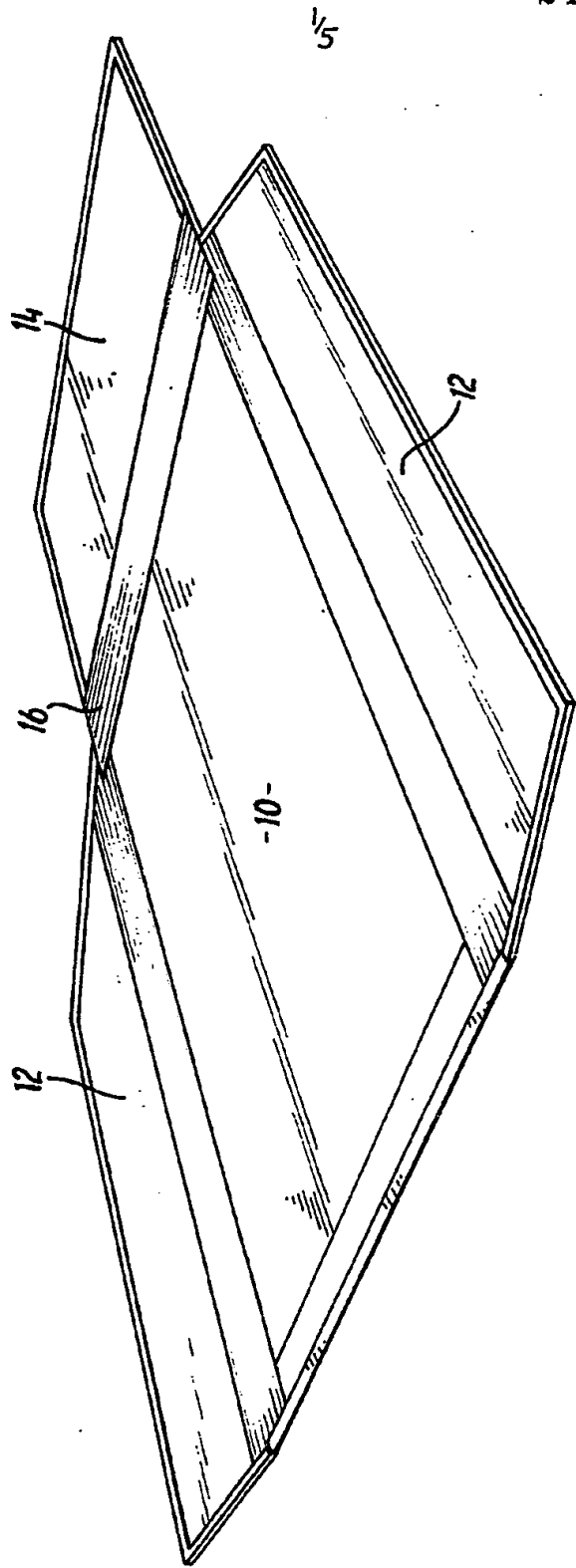
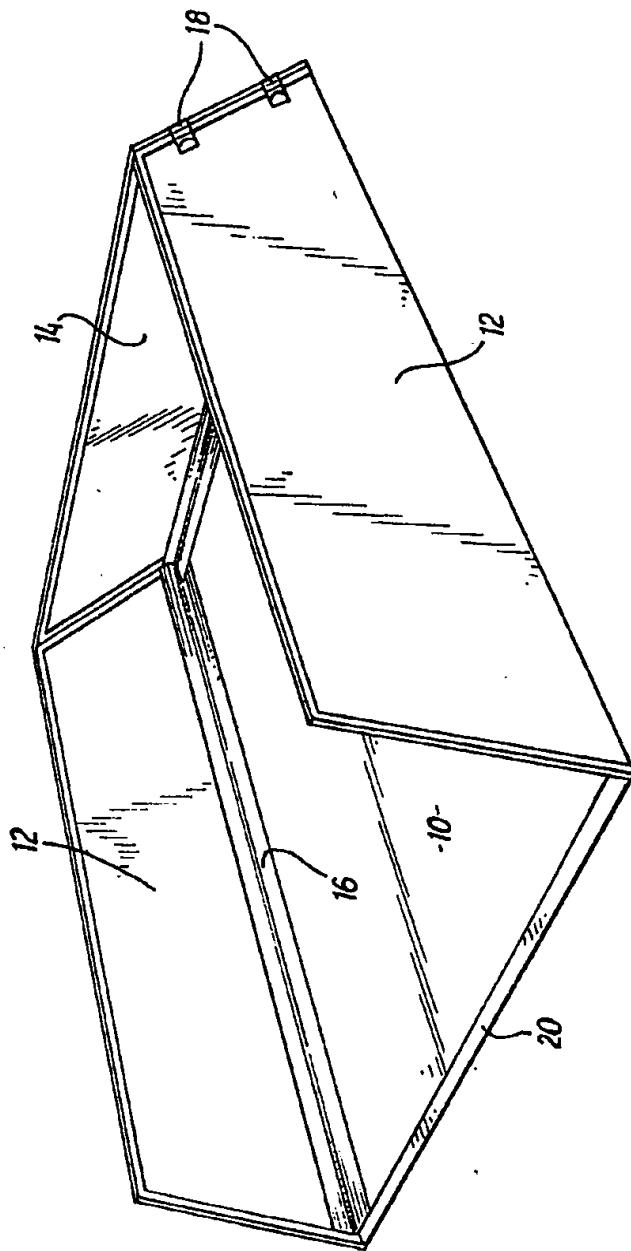


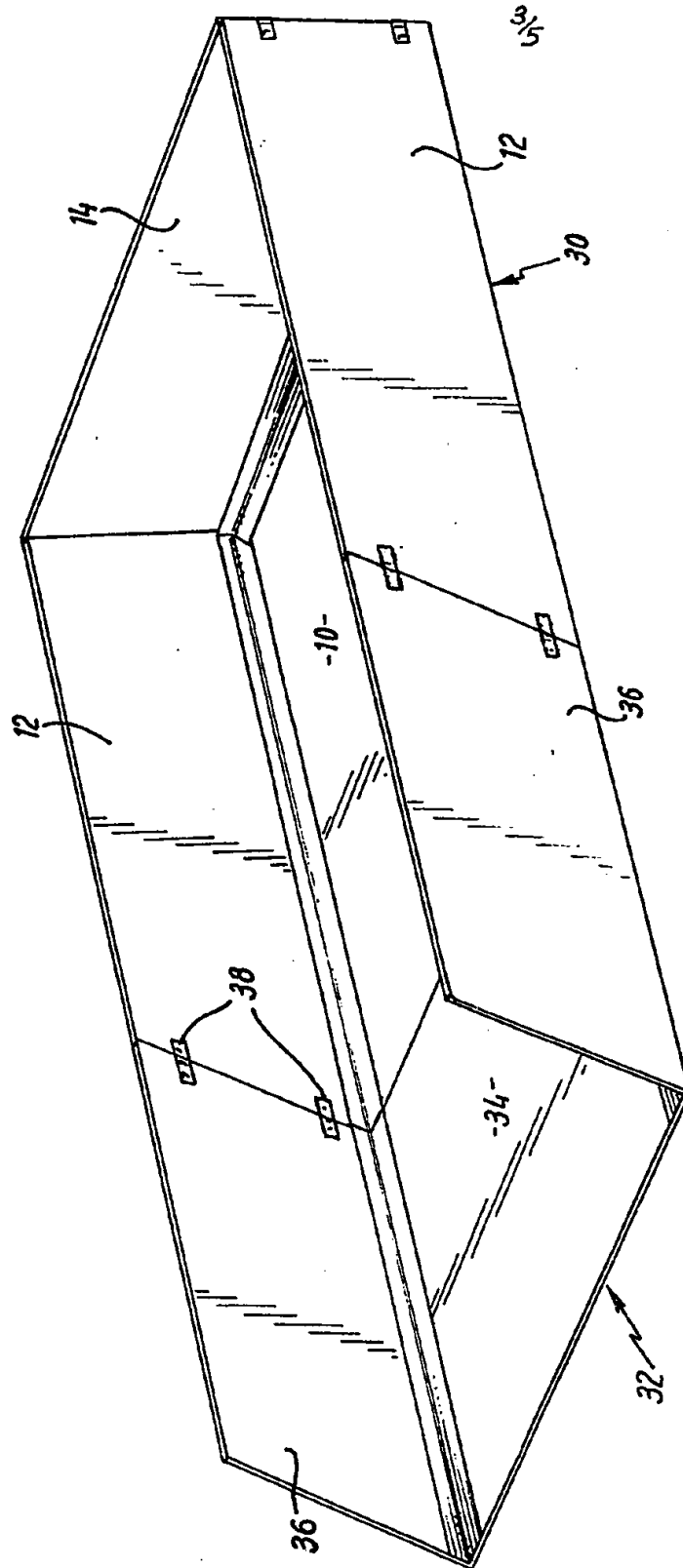
FIG. 1

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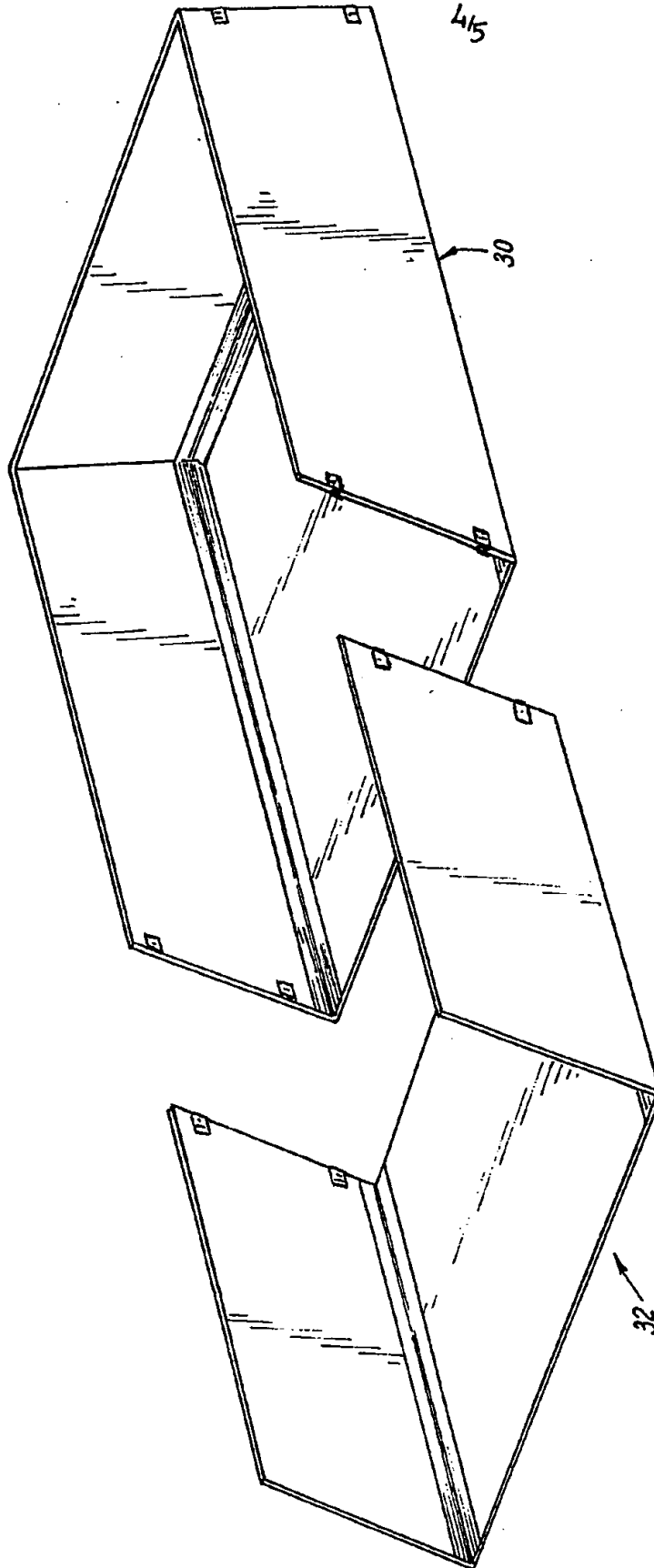
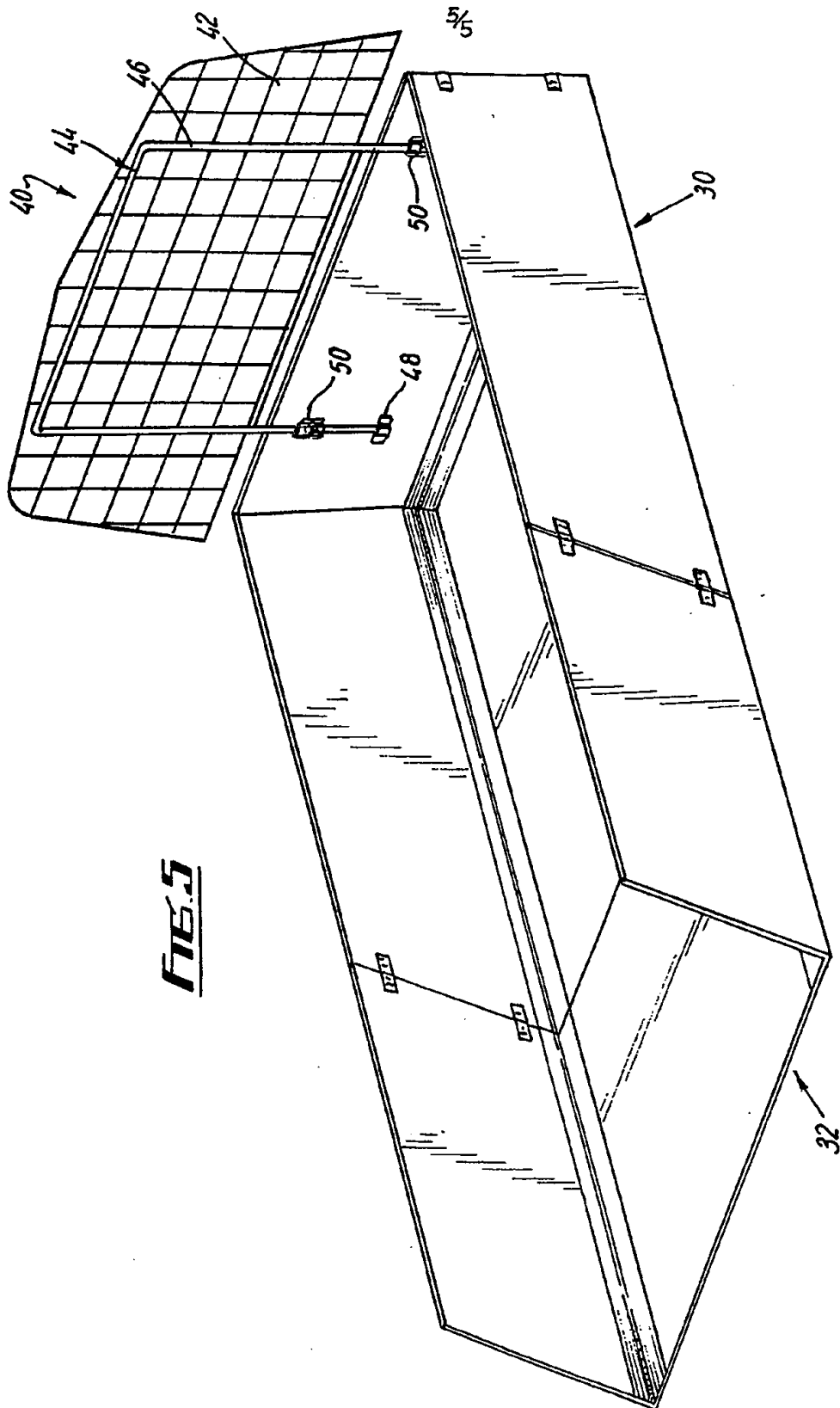


FIG. 1

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SPECIFICATION

Improvements in or relating to protective liners for motor vehicles

5 This invention is concerned with apparatus for use in load carrying areas of motor vehicles and particularly apparatus in the form of protective liners.

10 Liners for use in the load carrying areas of motor vehicles such as estate cars have previously been formed as an integral container shell shaped to be complementary to the shape of the load carrying area of the vehicle, for example to fit over wheel arches or other protrusions. Such liners have provided to be difficult to manoeuvre into and out of the vehicles, occupy an excessive amount of space when stored in an out-of-use condition, are susceptible to damage, and tend to be formed of a material providing a smooth surface over which material loaded onto the liner tends to slide.

20 According to the present invention there is provided apparatus for use in a load-carrying area of a vehicle, said apparatus comprising a base part, side parts hingedly connected to the base part, and an end part hingedly connected to the base part, whereby, in a collapsed condition, the base part, side parts, and end part are in a substantially flat configuration, and, in an erected condition, there is formed an open-ended container, means being provided for connecting together the side parts and the end part when in erected condition.

30 Preferably the side parts and the end part are each hingedly connected to the base part by means of a flexible material extending along the length of the connecting area. Desirably the apparatus is formed of two sections removably connected together.

40 Preferably a first of the sections comprises the base part, the side parts and the end part, and the second of the sections comprises a further base part and further side parts hingedly connected to the further base part, whereby in a collapsed condition, the further base part and the further side parts of the second section are in a substantially flat configuration, and, in an erected condition, the second section being connected to the first section to provide an extension of the open-ended container. The further side parts are desirably each hingedly connected to the further base part of the second section by means of a flexible material extending along the length of the connecting area.

50 The flexible material may be bonded to the material of the respective parts which are connected. The flexible material may be ribbed rubber or plastics material providing hinges.

60 Desirably each of the parts is formed of a material presenting a relatively non-slip surface. The material is preferably laminated timber, for example ply-wood. The connecting means preferably comprise over-centre catches.

Preferably there is provided a guard removably connected to the end part so as to, in use, extend

65 across the space in a vehicle above the apparatus to separate the load carrying area of the vehicle from the remainder of the vehicle. Also a guard may be removably connected to the end of the apparatus remote from the said end part.

70 Desirably the side parts and the end part have such a configuration that, when in an erected condition, the end part extends at an angle to the vertical substantially corresponding to the angle of an adjacent vehicle seat and the free edges of the side parts accommodate the shape of a rear door of the vehicle.

75 An embodiment of the present invention will now be described by way of example only, with reference to the accompanying drawings, in which:—

80 Fig. 1 is a perspective view of a liner in a collapsed condition;

Fig. 2 is a perspective view of the liner in an erected condition;

85 Fig. 3 is a perspective view of a modified liner in an erected condition;

Fig. 4 is a similar perspective view of the liner of Fig. 3 showing sections separated from one another; and

90 Fig. 5 is a perspective view of the liner of Fig. 3 incorporating a guard.

Referring to Figs. 1 and 2 of the drawings, a liner comprises a base part 10, side parts 12 hingedly connected to the base part 10, and an end part 14 also hingedly connected to one end of the base part 10. The parts 10, 12 and 14 are formed of a relatively non-slip material for example a laminated timber such as ply-wood. The use of such material enables the liner to be easily manufactured and relatively inexpensive to produce.

100 The connection of the parts 12, 14 to the base part 10 is effected by hinges 16 formed of a continuous flexible material, for example ribbed rubber, and bonded to the base part 10 and the respective one of the parts 12, 14. The hinge 16 connecting the end part 14 to the base part 10 is formed to have a "double throw" for a purpose hereinafter described.

110 In the collapsed condition as shown in Fig. 1, the parts 10, 12, 14 can be co-planar such that the liner can be laid on the ground in this condition and easily cleaned. For storage, the side parts 12 can be folded over the base part 10 and the end part 14 with its "double throw" then folded over the side parts 12 so that the liner can be stored in a substantially flat condition.

115 For use, the side parts 12 and the end part 14 are pivoted upwardly about their hinges 16 to an erected condition where the end part 14 abuts the adjacent side edges of the side parts 12. At appropriate locations on the outer faces of the side parts 12 and the end part 14, are provided components of clips 18, for example over centre latches. The clips 18 can retain the side parts 12 and the end part 14 in the erected condition. It will be noted that the configuration of the side parts 12 and the end part 14 are such that, in the erected condition, the end part 14 extends at an

angle to the vertical, this angle accommodating the angle of the seat of the vehicle against which the liner will be located. The free edges of the side parts 12 also extend at an angle to the vertical to accommodate the angle for example of the rear door of the vehicle.

An edging strip 20 formed for example of a plastics material or aluminium is attached to the free edge of the base part 10 to provide resistance to wear.

Referring to Figs. 3 and 4 of the drawings, a modified liner comprises a first section 30 of the same configuration as the liner described with reference to Figs. 1 and 2 but has detachably connected thereto a further section 32 comprising a base part 34 and side parts 36 which connect with the corresponding base part 10 and side parts 12 of the first section 30 by any suitable connecting means such as overcentre latches 38. When for example the rear seat of an estate car is collapsed the sections 30 and 32 connected together can form a lining for the total load carrying area, but when it is desired to have the rear seat erected the section 32 can be detached from the section 30 with the latter then forming a lining for the remaining load carrying area. In such circumstances it will be appreciated that the section 32 then has its side parts 36 folded over the base part 34 for storage in a substantially flat condition.

In a further modification as shown in Fig. 3, the end part 14 of the section 30 is provided with suitable means for mounting a guard 40 which may be in the form of a mesh 42 on an inverted U-shaped frame 44. The latter has legs 46 arranged to seat in sockets 48 provided on the end part with suitable means such as over-centre catches 50 being provided for retaining the legs 46 in the sockets 48. In use the guard 40 forms an effective barrier between the load carrying area of the vehicle and the passenger area and can be used as an animal guard or a cargo guard.

In a further modification (not shown) the side parts 36 of the section 32 may be provided with suitable means for detachably mounting a further guard so arranged that when the rear door of the vehicle is opened the further guard is effective to prevent dogs or the like from inadvertently escaping from the vehicle.

It is to be appreciated that the liner may be made of other material, for example a plastics material which may be formed with thin flexible sections between the base part and the side parts and the end part whereby to provide integral hinges.

There is thus provided a simple and inexpensive liner which can be collapsed when not in use so as to be able to be easily stored, and can be rigidly locked in an erected condition. The liner is also relatively easy to manoeuvre as it has a possibility of manoeuvring when in a substantially flat condition. The hinges do not become fouled by any dirt and the liner can be easily cleaned by collapsing to the condition shown in Fig. 1 where it can then be easily washed, for example by

hosing.

Various other modifications may be made without departing from the invention. For example stabilisers may be incorporated.

70 CLAIMS

1. Apparatus for use in a load-carrying area of a vehicle, said apparatus comprising a base part, side parts hingedly connected to the base part, and an end part hingedly connected to the base part, whereby, in a collapsed condition, the base part, side parts, and end part are in a substantially flat configuration, and, in an erected condition, there is formed an open-ended container, means being provided for connecting together the side parts and the end part when in the erected condition.

2. Apparatus according to claim 1, wherein the side parts and the end part are each hingedly connected to the base part by means of a flexible material extending along the length of the connecting area.

3. Apparatus according to claim 1 or 2, wherein the apparatus is formed of two sections removably connected together.

4. Apparatus according to claim 3, wherein a first of the sections comprises the base part, the side parts and the end part, and the second of the sections comprises a further base part and further side parts hingedly connected to the further base part, whereby in a collapsed condition, the further base part and the further side parts of the second section are in a substantially flat configuration, and, in an erected condition, the second section being connected to the first section to provide an extension of the open-ended container.

5. Apparatus according to claim 4, wherein the further side parts are each hingedly connected to the further base part of the second section by means of a flexible material extending along the length of the connecting area.

6. Apparatus according to claim 2 or claim 5, wherein the flexible material is bonded to the material of the respective parts which are connected.

7. Apparatus according to any of the preceding claims, wherein each of the parts is formed of a material presenting a relatively non-slip surface.

8. Apparatus according to claim 7, wherein the material is a laminated timber.

9. Apparatus according to claim 8, wherein the laminated timber is ply-wood.

10. Apparatus according to any of the preceding claims, wherein the connecting means comprises over-centre latches.

11. Apparatus according to any of the preceding claims, including a guard removably connected to the end part so as to, in use, extend across the space in a vehicle above the apparatus to separate the load carrying area of the vehicle from the remainder of the vehicle.

12. Apparatus according to any of the preceding claims, wherein a guard is removably connected to the end of the apparatus remote from the end part.

13. Apparatus according to any of the preceding claims, wherein the side parts and the end part have such a configuration that, when in an erected condition, the end part extends at an angle to the vertical substantially corresponding to the angle of an adjacent vehicle seat and the free

edges of the side parts accommodate the shape of a rear door of the vehicle.

14. Apparatus for use in a load carrying area of a vehicle substantially as hereinbefore described with reference to the accompanying drawings.

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